

REMARKS

Claims 1-4, 6-9, 11 and 12 are pending in the above-identified application. Claims 5 and 10 have been cancelled in favor of inserting the additional features of the thermosetting urethane resin composition employed in the golf ball of the present invention. Support for the changes to claims 1 and 6 is found at page 5 of the specification. New claims 11 and 12 employ the "consisting essentially of" language which excludes additional components which affect the material properties of the cover composition employed in the golf ball of the present invention.

It is requested that the above-noted changes to claims 1 and 6, as well as the addition of new claims 11 and 12, be entered of record and considered by the Patent Examiner since these changes at least place the present claims into better form for consideration on appeal, should an appeal be necessary. It is also submitted that these changes do not raise significantly different issues from the issues addressed up to this point during the prosecution of the present application such that the changes are appropriate under 37 C.F.R. 1.116.

Issues Under 35 U.S.C. §102(b)

Claims 1-10 have been rejected under 35 U.S.C. §102(b) as being anticipated and unpatentable over Wu '358 (USP 5,908,358). This rejection is traversed for the following reasons.

Present Invention and Its Advantages

The present invention is directed to a golf ball with a cover formed from a cured product of a thermosetting resin composition wherein the stiffness modulus (MPa) and Shore D hardness properties satisfy the relationships recited in claim 1. Significantly, the inventors of the present application have discovered a relationship between the stiffness modulus and hardness properties of the golf ball cover. Evidence of the advantageous properties exhibited by golf balls of the present invention is evidenced by the comparative tests results shown in Tables 2-4 at pages 22-26 of the present specification. In this regard, note that Examples 1-7 (present invention) in Table 2 all provide for excellent ("E") or at least good ("G") controllability and shot feeling properties. In contrast, the various Comparative Examples 8-18 exhibit predominantly poor controllability and shot feeling properties. Note especially Comparative Examples 11 (308 MPa stiffness; 59 Shore D hardness; and A/B ratio of 5.2) and 15 (90 MPa stiffness; 52 Shore D hardness; and A/B ratio of 1.7) which both exhibit only

poor ("P") or fair ("F") controllability and shot feeling properties. Comparative Examples 11 and 15 have acceptable golf ball cover stiffness and hardness properties according to Wu '358 discussed below.

Distinctions between Present Invention and Wu '358

Wu '358 discloses a golf ball having a urethane cover which is formed using an epoxy curing agent. The cover may be formed from a thermosetting or thermoplastic polyurethane composition and the Young's modulus of the cover is in the range of 5,000-100,000 psi (converting to 34.5-689.5 MPa). This is described at column 2, lines 35-45 and column 5, lines 8-22. Wu '358 further discloses at the bottom of column 6 to the top of column 7 that the golf ball cover is formed to have a Shore D hardness at the end of the intermediate curing step of 10-30. Wu '358 discloses at Table 1 examples of the invention wherein the cover has a Shore D hardness of 51 and 58. Wu '358 clearly states that using an organic curing agent having at least one epoxy group materially affects the properties of the golf ball cover composition described therein based on the conclusions drawn with respect to the comparative test results at column 9, lines 14-22. Here, Wu '358 points out that golf balls which employ compositions without an epoxy curing agent

exhibit disadvantageous, inferior properties when compared to the inventive examples which employ an epoxy curing agent.

Wu '358 fails to disclose the use of the specific thermosetting composition employed in the present invention as recited in the present claims. The disclosure by Wu '358 at column 5, lines 39-50 does not include any of the specific examples of the isocyanate components employed in the urethane prepolymer of the thermosetting composition of the golf ball cover of the present invention. Wu '358 fails to provide any reasonably adequate suggestion to employ these isocyanate components. In addition, claims 11 and 12 employ the "consisting essentially of" claim language which excludes additional components that materially affect the properties of the claimed composition, such that these claims clearly exclude the epoxy curing agent required by Wu '358 which, as noted above, Wu '358 clearly establishes materially affect the golf ball cover composition properties. Consequently, significant patentable distinctions exist between the present invention and Wu '358.

In view of the above, the "anticipation" rejection under 35 U.S.C. 102(b) must be withdrawn, since Wu '358 fails to disclose any examples having all the features recited in the claims of the present application. Consequently, even if Wu '358 is subsequently used as a basis for asserting "obviousness" under 35 U.S.C. 103(a),

it is noted that the Patent Examiner must take into account the evidence of unexpected, advantageous properties which support the patentability of the claims of the present application as discussed immediately below.

Wu '358 also fails to disclose the specific relationship between the stiffness and hardness properties of the golf ball cover as in the present invention, such that the ranges for "A" and "B" are satisfied as recited in claim 1 of the present application. In fact, as noted above, Comparative Examples 11 and 15 in Table 3 at page 24 of the present specification employ acceptable stiffness and hardness properties based on the ranges and examples described in Wu '358. Consequently, it is clear that Wu '358 fails to provide any reasonable suggestion towards obtaining the present invention such that a person skilled in the art would have to engage in experimentation without sufficient guidance. Wu '358 fails to recognize the advantages associated with the golf ball of the present invention with regard to advantageously improved controllability and shot feeling properties. Therefore, additional significant patentable distinctions exist between the present invention and Wu '358.

In addition to the above, it is submitted that Wu '358 employs a specific type of "Young's modulus" as described at column 5, lines 19-21 which is based on a specific ASTM method, i.e. "D638-84

wherein the chord technique is used." It is not evident that this type of stiffness measurement is equivalent to the "stiffness modulus" measurements used in the present invention. In any case, even assuming that the stiffness measurements of Wu '358 are equivalent to the stiffness measurements of the present invention, Comparative Examples 11 and 15 in Tables 2-4 of the present specification exhibit comparatively poor or fair controllability properties with respect to examples of the present invention even though Comparative Examples 11 and 15 apparently satisfy the "Young's modulus" properties disclosed to be acceptable in Wu '358. Consequently, even assuming that the stiffness measurements are equivalent, Wu '358 allows for disadvantageously inferior properties to be exhibited by the golf ball cover composition disclosed therein such that this is additional evidence of the patentability of the present invention over Wu '358.

Conclusion

It is submitted for the reasons stated above that the present claims define patentable subject matter such that this application should now be placed condition for allowance.

If any questions arise regarding the above matters, please contact Applicant's representative, Andrew D. Meikle (Reg. No.

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32,868), in the Washington Metropolitan Area at the phone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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